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ABSTRACT

Focusing on how computers can and should be used in intercollegiate forensics, this journal issue offers the perspectives of a number of forensics instructors. The lead article, "Applications of Computer Technology in Intercollegiate Debate" by Theodore F. Sheckels, Jr., discusses five areas in which forensics educators might use computer technology: (1) computer assisted instruction, (2) text preparation, (3) program management, (4) research, and (5) evidence filing. The remaining articles, by Melissa Maxcy Wade, John Morello, Sharon Porter, Barbara F. Shreve-Sims, and Warren Decker, are replies to Sheckels's article, pointing to possible drawbacks in computer use as well expanding upon his suggested applications. (FL)

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EDITOR:
Jack Kay
Department of Speech Communication
432 Oldfather Hall
University of Nebraska–Lincoln
Lincoln, NE 68588-0329
(402) 472-6920 or 472-2070

EDITORIAL ASSISTANTS:
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EDITOR'S FOREWORD

Americans have always had a strange fascination with technology. The "tech fix" is offered as the solution to virtually every problem confronting our world. This issue of *Speaker and Gavel* addresses the question of how computers can and should be used in contemporary intercollegiate forensics. The issue is the "brain-child" of Theodore Sheckels, Jr. I thank Professor Sheckels for assembling an outstanding group of debate coaches to respond to his lead article. Sheckels' article does an excellent job of surveying several current and potential applications of computer technology in forensics. He also builds a persuasive case for certain applications. However, the most valuable function served by the article is the beginning of a dialogue on the advantages and disadvantages of computers in forensics. The dialogue is ably taken up by a number of forensic educators at a variety of institutions. This issue certainly does not resolve the debate on the pros and cons of "tech fix" in debate. After reading the essays in this issue you may conclude as I have that far more problems are raised than are solved. There is one thing that is clear: once the gate is open, there is no turning back. It is up to forensic educators to guide the future. Rather than letting technology control us, we must make sure that we guide technology to serve pedagogical purposes. The essays in this issue are extremely valuable in helping us think about many of the topics we will soon be facing.

Jack Kay—Editor

SPEAKER AND GAVEL, Vol. 23, No. 2 (1986), 51.

APPLICATIONS OF COMPUTER TECHNOLOGY IN INTERCOLLEGIATE DEBATE

Theodore F. Sheckels, Jr.
Director of Forensics, Randolph Macon College,
Ashland, Virginia

It is now almost absurdly anticlimactic to announce the beginning of a computer revolution in education: numerous colleges and universities have computer literacy programs in place; an increasing number of institutions are requiring or strongly recommending that students purchase their own microcomputers; micros are becoming as common in classrooms as overhead projectors were twenty years ago. Yet, in forensics education, the revolution is only beginning. Why forensics educators have been cautious in computerizing is the subject for another essay. Whatever their reasons, be they computer anxiety or a genuine desire to sustain *human* communication in the face of "tech creep," forensics educators can now—I argue—move to computers with sufficient assurance that the move represents educational progress as well as an increase in efficiency.

In this essay, I discuss five areas in which forensics educators can profitably embrace computer technology: 1) computer-assisted instruction (CAI); 2) text preparation; 3) program management; 4) research; and 5) evidence filing. My emphasis is on the activity of debate, although I occasionally glance at individual speaking events. For each area, I justify the use of computers as well as describe the nature of the possible applications, the immediate ones and other "futuristic" ones.

1) Computer-Assisted Instruction

When microcomputers and the associated software appeared in the educational scene, many educators turned to them for a variety of instructional tasks. Educators did not always examine the cognitive skills the tasks involved and ask if CAI was an effective means of teaching the skills. Research since then has established the appropriateness of CAI for at least four cognitive skills: recall, synthesis, application of facts and principles, and patterned thinking. CAI can prove superior to traditional classroom instruction in helping students to attain these skills *if* the CAI software is well designed with the two features that research has demonstrated to be educationally beneficial: immediate feedback and adaptation to different levels of student aptitude and experience.[1]

A brief example for each cognitive skill should help clarify my point. The

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[1] Theodore F. Sheckels, Jr., "Computer-Assisted Instruction in Debate: Possibilities and Problems," *Journal of the American Forensic Association*, 19 (1983), 266–69; Theodore F. Scheckels, Jr., "Computer-Assisted Instruction in Debate: Teaching the Fundamental Thinking Skills," *Sixth International Conference on Computers in the Humanities*, ed. Sarah K. Burton and Douglas D. Short (Rockville, MD: Computer Science Press, 1983), pp. 637–39.

SPEAKER AND GAVEL, Vol. 23, No. 2 (1986), 52–61.

skill of recall is seen in a CAI drill presenting and then questioning students about the fundamental information concerning United States involvement in Central America or any other debate topic. The skill of synthesis is featured in a CAI drill helping students generate numerous arguments and then build them into coherent argumentation packages. The skill of application of facts and principles is seen in a CAI drill which asks the users to select the information and argumentation pertinent to a given affirmative case. The skill of patterned thinking is involved in a CAI drill which teaches debaters to ask the appropriate heuristic questions when applying the stock issues to an affirmative case in an attempt to generate refutation.

To my knowledge, the only existing CAI software that addresses these specific needs is that which I designed a few years ago with National Science Foundation funding.[2] Using this program, a debater can hone his or her refutation skills—either general ones or the particular ones practiced in competition by National Debate Tournament first and second negative constructive speakers—by being drilled in the kinds of patterned thinking that debate refutation demands.[3]

My guess is that commercial software of this kind is not likely to appear because of the market's small size. Therefore, the only feasible alternative to each debate coach reinventing the wheel would be the coordinated sharing of home-grown software—perhaps under the auspices of the American Forensic Association, the Speech Communication Association, or one of the national forensics fraternities.[4]

The educational value of appropriate CAI provides a compelling argument for designing and using instructional software. How the use can ease the job of the forensics educator should also be noted. To the extent certain instructional chores can be delegated to CAI, the overworked forensics educator will acquire additional time. This time can then be spent in a variety of ways in and out of the forensics program: intensive training of top varsity teams, more critiqued intra-squad practice debates, research and publication, improvements in one's non-forensics teaching, and rest and recreation.

2) Text Preparation

The most common application of computer technology is word-processing; therefore, the use of computers in text preparation is probably the most obvious application. During the past several years, an increasing number of teams have been seen reading computer-generated materials.

Three kinds of texts can be prepared using word-processing software:

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[2] Grant #SER-8005293

[3] Sheckels, "Computer-Assisted Instruction in Debate: Possibilities and Problems," pp. 269-71, 278-80; Sheckels, "Computer-Assisted Instruction in Debate: Teaching the Fundamental Thinking Skills," pp. 639-46.

[4] Software exchange sessions have been held at the national meeting of the Conference on College Composition and Communication, for example. Those who wish to participate in the exchange bring a program they have designed plus a number of blank diskettes. The incompatibility of software due to the different operating systems used by different microcomputers has limited the amount of exchange.

first affirmative constructive speeches; "case briefs" (i.e., lists of arguments to be offered against specific cases); "argument-specific briefs" (e.g., evidenced blocks for first negative and second affirmative constructives; evidenced disadvantages or off-case arguments for second negative constructives).[5] One advantage of preparing these texts using word-processing software is the ease with which various types of revision can be made *while* the preparer thinks through the argument he or she is generating. A more important second advantage is the ease with which these texts can be revised and reprinted on an on-going basis as the debate season progresses. Revisions requiring hours of work without a computer take only an hour with computer word-processing; updating that once waited for semester or holiday breaks takes place weekly.

The use of computer technology in this fashion can be taken one step further: teams can use a microcomputer and printer at tournaments and in actual competition. First affirmative constructives can be revised on-the-spot—perhaps after a flaw is pointed out in an early round; perhaps as part of a team's adjusting to a particular judge-critic. More important, argument-specific briefs can be adapted in a debate to the particular case being considered. A copy of the brief can be made on the screen, and this copy can be quickly modified as necessary. The ability to make such modifications should encourage debaters to relate their pre-prepared argumentation to the particular debate in which they are competing and, thereby, substantially improve the use of generic disadvantages and the like.

This past season, several of my debaters experimented with a microcomputer and printer in actual competition. They carried a Kaypro II microcomputer and an Olivetti quiet inkjet parallel printer from round-to-round—with plug adapters, extension cords, microprocessor-to-printer cable, fanfold paper, etc. Among the diskettes they used was one containing case briefs and argument-specific briefs (some outlined, some evidenced). They found having the case briefs to be "neat," but no more convenient than having them on paper. They did find that having the argument-specific briefs on the computer enhanced adaptation. A five-line attack on the concept of "effects topicality" could be pruned and/or rearranged to suit the time constraints of the speech being planned and the case being challenged; the subpoints establishing the links between an affirmative policy and a disadvantage could be substantially modified to assure "a better fit."

The word-processing software they used (WORDSTAR) was sufficiently fast in performing all operations, as was the printer. The single serious logistical limitation faced in the operation involved the limited buffer memory of the parallel printer. The debaters had to wait until a particular brief was printed to even look at another brief. This logistical limitation can only be overcome at the cost of a considerably more expensive, probably less portable printer.

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[5] For a more specific discussion of case briefs and argument-specific briefs, see Theodore F. Sheckels, Jr., *Debating: Applied Rhetorical Theory* (New York: Longman, 1984), pp. 191–95.

3) Program Management

Other kinds of materials can be placed on diskettes to facilitate both forensics education and program management. Two have proven particularly useful in my experience.

I have designed a specific data form (using DATASTAR) on which I enter a simplified version of the judging philosophies of the critics my debate teams are likely to encounter. The data form provides easy access to such information as the judge's paradigm, his or her attitude toward topicality, and the key voting issues in his or her mind, as well as information of special interest to our particular program. The advantage of computerizing this information is the ease with which the entered data can be revised and made topic-specific as a particular season progresses based on the critic's ballots and comments.

Another handy use is putting travel schedules either on a diskette that debaters can access on a microcomputer in their office or workshop or on the institution's mainframe. The latter way, debaters can access the schedule from terminals in a number of locations on a typical college or university campus. This schedule can list a variety of information: scheduled tournament dates, students participating, departure time, lodging information, etc. As with other computerized information, the advantage of placing such information on diskette or in a read-only mainframe account is the possibility of changing plans as necessary and communicating such information as quickly as possible to students. Students, of course, must develop the habit of checking the computerized schedule. If they do so with a degree of regularity, the system can provide a more efficient method of communication than passing oral messages along or trying to telephone several students in their dormitories.

4) Research

Research need no longer be confined to the physical walls of a college or university library. Whether the research be for a debate team or a forensics program's extemp files, the computer can be of assistance. Through computer searches, the student can electronically identify resources physically and *not* physically within the library he or she is using. In fact, the searches need not even take place within an actual library if the institution allows remote access to the networks to which the institution subscribes or if a forensics program itself is a direct subscriber. Through computer searches a researching student can gain an excellent annotated or non-annotated bibliography or even data.

Bibliographic searches give the researcher a list of materials he or she then needs to locate. Annotated bibliographical searches give the researcher more: a list plus a summary of each item on the list. Whether the search yields annotations or not depends on the nature of the database. More databases provide annotations than do not.

Two examples should demonstrate the value of database searches. On the 1981–1982 National Debate Tournament resolution concerning labor union power, one of my teams wanted to argue that railroad work rules were causing financial problems for railroads and that labor unions were not

yielding on these rules in contract negotiations. The team accessed the computer network DIALOG in our library. They selected a rather specialized database, the Transportation Research Information Service (TRIS); they selected date parameters of 1978–1981; then they selected an initial descriptor, "Rail Transport" or "Railroad." The computer told them that 7,618 items in the database had one of these phrases among their descriptors. They then selected "labor" as a second descriptor, and the computer told them that 400 items matched the first *and* second descriptors. They then selected "work rules" as a third descriptor. This third selection reduced the number of items to a manageable and affordable 45. They then had the option of asking for citations and abstracts then and there (more expensive) or placing a mail order (less expensive). They opted for the latter. The total search time for the computer was .061 hour; the cost was approximately $30.[6]

On the 1984–1985 debate resolution concerning the exploration and development of space, one of my teams wanted to argue the advantages of gallium arsenide microprocessing technology over silicon microprocessing technology. The DIALOG database chosen was called "Computer Database"; the selected dates were 1983–1985. The first descriptor, "gallium arsenide," had 122 matches; the first and second, "computer," had 22. The team opted for a mail order again. The computer time was .057 hour at a cost of approximately $15. The abstracts led to several excellent articles, allowing the team to argue convincingly that gallium arsenide technology was far superior to silicon, that Japan was considerably ahead of the United States in gallium arsenide technology, and that gallium arsenide crystals manufactured in space were far superior to those produced on Earth.

Networks are offering more than bibliographies and annotated bibliographies. Already news stories, Supreme Court decisions, statistical data, the *Congressional Record*, newspaper editorials, and other information sources are available through networks. This availability serves at least three functions: first, it makes research more efficient (although more expensive) since less running around in the library is required; second, it expands the resources of a smaller academic library, thereby eliminating trips to larger libraries for debaters and reducing the research gap between small schools and large schools; third, it can bring the resources usually available only in specialized libraries (e.g., law libraries, engineering libraries) within the grasp of students working in the more generalized academic library.

Another special research application of computers in debate involves accessing databases during tournament competition. Debaters could find a telephone between rounds and gather additional material on the case they know they are about to debate. Or—a logistical nightmare for tournament directors—debate teams could start requiring a "live" phone jack in rooms where they compete. They could carry a telephone, plug it in the jack, dial the network using a credit card number, attach the receiver to their modem, and access data *during* a round. This immediate access to data could have at least four beneficial effects: 1) the time-consuming material-gath-

[6] Sheckels, *Debating*, pp. 27–28.

ering phase of debate, one which turns many students away from the activity, could be reduced since information would be acquired more on an *ad hoc* basis; 2) the emphasis could then shift from diligently acquiring evidence to intelligently studying and using evidence; 3) the emphasis could furthermore shift from matching card for card in a speed-reading contest to examining the evidence closely and contextually since both teams could conceivably access the evidence and look at it in its full context; 4) powerful information accessing and use skills increasingly applicable in a variety of careers would be acquired.

Database access is useful not only to the debater but also to the extemporaneous speaker. Perhaps more useful to the extemper is the availability of newspaper and magazine subscriptions on diskette. Increasingly, traditional print media are giving subscribers a non-print option, and there is every indication that the trend will continue. Piles of magazines could give way to a microcomputer and a box of floppy disks with access via telephone and modem to more sophisticated data sources than *Time* and *Newsweek*. The kind of research such a system permits is suitable for pre-tournament preparation *and* in-tournament preparation, although the latter would raise the same logistical problems as does the use of telephone and modem access in debate rounds. Extempers working with micro-modem technology would gain the same valuable information skills as would debaters; also, extempers would be able to enrich their presentations with *the best* information on the subject at hand, not simply what recent newsmagazine issues chose to present.

5) Evidence Filing

Cases and briefs constitute the major texts that debaters generate but certainly not the only printed materials they use. In fact, the major printed materials they use are the thousands of index cards filled with evidence. Computer technology can be applied to these evidence files in at least two ways.

The first assumes the existence of team files—i.e., several identical files of evidence cards gathered by the entire team for the use by the entire team. For a system of team files to operate efficiently, there should be a master file. This master file can, of course, look just like the others—a large quantity of 4" × 6" index cards; however, it could conceivably be computerized. Evidence would be entered, not on index cards, but on diskettes—perhaps a diskette per major heading. Placing evidence on diskettes eliminates the chance of a card getting lost during or out of competition. More important, having the evidence on diskettes would make the generation of a new "hard copy" file very easy. Imagine how long it would take to generate extra evidence files if, on a given weekend, the coach wanted to send out two more teams than there were team files. If the master file were computerized, the nearly impossible task would be completed in a few hours— maybe less. Load the diskettes one-by-one into the computer; load the printer with fan-fold index cards; and give the appropriate print command. While the computer and the printer do their work, the debaters can do something else. Someone needs to be there to change diskettes and reload the printer

when the cards run out, but these are occasional, fairly mindless tasks. The mind can be devoted to something else—research, brief formulation, homework.

How often the diskette needs to be changed depends on the capacity of the diskettes and the amount of evidence. My debate team uses a computerized evidence file. The microcomputer we use takes single-sided, double-density floppy disks. Each diskette holds approximately 250 cards. If a team's computerized evidence file used double-sided, double-density diskettes the capacity would increase to approximately 500. A built-in hard disk drive or a peripheral hard disk drive would increase the capacity several more times.

The second way computer technology can be applied to evidence filing is pertinent whether a team uses team files or individual files. This application totally replaces index cards and file boxes with a microcomputer. The microcomputer and a printer are carried into competition.

One of my debate teams experimented with just such an application this past debate season. Evidence was stored in data fields created using the DATASTAR software which came bundled with the team's Kaypro II microcomputer. Using this software, they could access evidence in four ways: 1) they could skim through all of the evidence in the order it was entered (Index Mode); 2) they could select a subheading and then skim the evidence in that subcategory (Scan Mask Mode); 3) they could select a particular author, publication, or year and skim only the evidence in that subcategory (also Scan Mask Mode); 4) they could call up a particular piece of evidence by using a key (Key Mode). The key I chose to use was an identification number, 1 to 250; however, the key could just as easily have been "author, date" as in "Smith, 1985." In the Index Mode, the print command would cause the entire diskette to be printed, beginning with the card on the screen, until an escape command was entered by the debater or the task was finished. In the Scan Mask Mode, the print command would cause the entire subheading to be printed, beginning with the card on the screen, until an escape command was given or the task completed. In the Key Mode, the print command would cause just the particular evidence card to be printed. The printer itself, an Olivetti silent inkjet printer, was programmed to print a card, skip three lines, and then print another card.

The suggested procedure was to plan one's evidence use, noting the evidence card numbers on the flow sheet and then, before rising to speak, to print up the cards in the order they were to be read on scrolling paper. My hope was to make it possible for the user to give one print command for all needed cards on a given diskette—something like "Print 23, 24, 16, 25, 19, 182, 171." However, in the experiment's first year, I never reached the point where I, with computer science faculty assistance, could modify the DATASTAR software and the printer's operating programs to accept such a blanket command. Such a command would have made it possible for a debater to actually commence speaking while the evidence was being printed, assuming only one diskette was needed. We had designed a filing system for the ten diskettes we used to maximize the chance of a given speaker's needing only one diskette; we also entered some evidence on more than one diskette. A better way to maximize the chances would have

been to use double-sided, double-density diskettes. One way to guarantee that there would be no diskette changing would be to use a single hard disk drive. However, the higher-capacity technology was not possible given our capital expenditures budget.

To compensate for the inability to give a single print command, the team experimenting with the system would often print hard copy of several fairly large subcategories very early in a debate—as soon as they knew the type of affirmative case they were meeting. This large-scale printing saved preparation time; however, it—to a point—muted the effect of the experiment since the result was the replacing of 4" × 6" cards with disposable fan-fold paper sheets (the former easier to handle), not the replacing of 4" × 6" cards with an electronic filebox and evidence printed-up in reading order. With a multiple-print command in place, the team will continue the experiment next season, and I hope they become less prone to print huge chunks of material. However, I fear the desire to print and print and print reflects their higher level of comfort with paper technology than with electronic technology and may by symptomatic of an attitudinal barrier that will prevent the experiment from proceeding along desired lines.

The experiment's goal was to devise a computerized system that was *as fast as* 4" × 6" cards, *not* to devise a speedier system. Now, you might ask, if the goal was only to match existing technology, why was the experiment conducted? The experiment had both a logistical goal and an educational goal.

The logistical goal was to reduce file-management tasks on campus. My feeling was that an inordinate amount of time was spent straightening out files and replacing "lost" evidence cards between tournaments and redoing the intricacies of the filing system during gaps in the season. This time spent on file management was time *not spent* on brainstorming, thinking, practicing, researching—the tasks from which debaters profit most. With a computerized file, no straightening was ever necessary and no evidence cards were ever "lost." Plus, if a new subheading was needed in a hurry, it could be created electronically by "moving" certain evidence cards by key number to a newly created batch file on the same diskette, reassigning the subheading on all cards in the batch *en masse* with a single command, and then merging the batch file back in with the rest of the evidence. The procedure permits the creation of a new subheading with evidence in it without removing that evidence from previous subheadings. This procedure then allows debaters to include a particular piece of evidence in two or more places—something requiring considerably more work with index cards. If the debaters wanted to move a particular piece of evidence into a new subheading without leaving a copy behind in the old subheading, that would require the execution of a slightly different but equally quick procedure.

To a limited extent, we met the experiment's logistical goal. Straightening and replacing proved unnecessary: try as they might, the debaters using the computerized file could not succeed in wrecking the system so that it required file maintenance back on campus. Sufficient protection was built into the software in my initial formulation of it to safeguard the evidence from accidents. We did not engage in very much evidence shuffling since the computerized file traveled to only four tournaments. The little we did

was accomplished without a hitch. Just in case of foul-ups, I always carried a back-up copy of everything in my brief case; however, it was never necessary to use the back-ups—on the road or on campus.

The educational goal does not presuppose that a computerized system is speedier than a paper one. The goal is based on the answer to the following question: if index cards and a computerized data base are equal in efficiency or nearly so in competition, which is educationally preferable? The answer is found in the growing dominance of computer technology in research, data management, and text preparation. Index cards will soon be an archaic technology, if they are not already. Law offices, businesses, medical research facilities, etc., are increasingly using computer technology—to the point where paper is becoming no more than a disposable output medium. If we are educating future lawyers, business executives, physicians, etc., we should be providing them with training in the information technology they will be using as they research, handle data, and prepare texts in their careers, not in one that has a very limited life expectancy.

One can argue that computer technology will not replace paper technology overnight; one can argue that 4" × 6" cards and the like will remain the data-managemennt technology of choice for the many (individuals and businesses) who cannot afford a computerized information system. It is easy—and tempting—to overstate the impact of computer technology on society; however, it is equally easy to be reactionary and engage in understatement. A sane, moderate prediction would call for the dominance of computerized information technology by the year 2000. If so, and if we do not shift debaters to computerized data technology, we will be preparing all of them for obsolescence by the time they are 34 or 35 years old, and many for such an unfortunate state even earlier. Is such a course on our part educationally defensible? I think not.

The only consideration that prevents me from arguing without reservation for such a shift is our failure to establish that a computerized data system could be as efficient in competition. I identified earlier two hardware-software limitations we labored under: the use of single-sided, double-density diskettes and the use of a parallel printer with a limited buffer. I also indicated how the debaters' attitudes may have entered into the situation and caused them to print too much. We intend to continue the experiment, perhaps trading our computer which uses single-sided, double-density diskettes for one with the same random access memory which uses double-sided, double-density diskettes, and trading our quiet inkjet printer for a slightly faster dot matrix parallel printer with a larger buffer and equipping it with a noise cover. We intend to educate the students involved in the experiment more and provide them with far more practice time on the machine. This year, practice time was limited by our student aide's need to use the computer to create and expand the database.

The kind of experiment necessary to establish firmly the equal efficiency of a computerized file to a card file would be very difficult to conduct. A debate coach would have to have a large squad (a minimum of 20) and divide the group randomly in half. One half would use card files; the other half would be trained to use computerized files. An accurate record of evidence examined and evidence used per minute of preparation and speaking would

have to be kept for a number of tournaments for both groups. Assuming that the amount of evidence examined per minute and the amount used per minute, in some kind of combination, is a measure of data retrieval efficiency (a big assumption), this experiment would show if a well-designed computerized filing system is as efficient as one composed of index cards.

Randolph-Macon College's debating program is not going to undertake such an experiment. We might find 20 debaters; however, we do not have five portable computer systems. In addition, the idea of determining team assignments randomly, although necessary for experimental validity, contradicts the concept of intelligent coaching. What if the potential national championship team ends up, based on randomization, half in the control group and half in the experimental group? Randolph-Macon will continue to rely on anecdotal evidence in assessing the efficiency of its computerized evidence file. At present, the very limited anecdotal evidence is not positive; however, as I noted earlier, the experiment has only begun. One more year will be necessary before any firm conclusions can be offered to the forensics community—except that the use of such a system is logistically quite feasible.

Conclusion

The computer revolution is very much a part of society in general and education in particular. This revolution should begin having more of an impact on forensics in the very near future. The possible areas of impact are CAI, text preparation, program management, research, and evidence filing. In all five of these areas, I have outlined some of the specific applications—some are already standard operating procedure in many programs; others are experimental; still others are futuristic. I have tried to justify all on educational and/or efficiency grounds. Although the length of this article and its audience made a detailed technical treatment of the subject inappropriate, I have tried to raise briefly the major technical issues that arise in connection with the different applications.

What I have said in the preceding pages, although at times presented more for information than persuasion, can be interpreted as a strong endorsement of and argument for the uses of computer technology in forensics. I have raised some of the objections, qualifications, reservations, and quibbles that might be addressed to such an endorsement or argument along the way and responded briefly to them. By no means, however, does this presentation resolve the debate or end the discussion. The commentaries following should help bring more issues to the forefront, complicating the question yet simultaneously providing valuable additional perspectives. But even this complete journal issue will not resolve matters; it should, however, provide forensics educators with much of the information and argument necessary so that they may intelligently direct how the computer revolution affects the different forensics activities.

REPLY

Melissa Maxcy Wade
Director of Forensics, Emory University

When first asked to respond to an article on the use of computers in debate preparation and competition, I was intrigued given the relative novelty of the eight-month-old Apple IIe that resides in my office at Emory. While three years elapsed between my initial request for a computer and its actual arrival, my sense of its potential as a problem solver for weaknesses inherent in the structure of our organization grew. Sheckels' conclusion that the "overworked forensics educator will acquire additional time" from the use of the computer for CAI was an understatement. Our experience has been that overworked assistant coaches and students have also acquired significant time and that the impact of the computer on the efficiency of all of the participants of the Emory debate team has been significant. While there are certainly limits to what a computer can do, I agree that the potential applications in forensics education are only in the beginning stages.

This commentary examines the five areas Dr. Sheckels argues are profitable computer uses by debate teams. Further, it suggests additional computer applications within the context of our experience and those we have observed at other schools. The Emory experience is certainly colored by the size of our forensics team, which is composed of thirteen NDT debate teams and four CEDA teams; the size of our coaching staff, which is composed of two full-time coaches and one part-time graduate assistant; and the fact that Emory has no speech communication department.

The potential use of CAI in debate is significant. A number of situations arise in which the forensic educator finds himself/herself without the time to do an adequate job of instruction outside of regular class time. For example, computer instruction would be useful for the college students who have decided to join the debate team midway through a semester in which they are not enrolled in an argumentation and debate class or have missed non-credit lectures for the debate team; the high school student who must miss the first several days of a summer forensics institute; the beginning or intermediate college debater who simply needs more time and practice to absorb and comprehend the lecture material in a credit or non-credit class on debate theory and skill development. These students need basic theory instruction, topic analysis, tools for synthesizing material and building arguments, and general forensic skill development.

As a result of my own frustration with these situations, I have been in the process of developing a series of basic debate theory lectures using the computer language Pilot which provides the means to an interactive mode with immediate feedback and advancement to different levels of more exotic argumentative theory perspectives. I am in sympathy with Sheckels' position that an "alternative to each debate coach's reinventing the wheel" be found. Certainly, the potential for computer applications in debate warrants some type of professional interest at annual conventions or at a specialized conference. It would also be useful to survey the population of

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debate coaches and to glean from them the computer activity and applications that are currently being explored and used.

The limits to the use of CAI that I can envision on a large debate team are related to the significant cost of creating a computer lab so that all who need access to the equipment will receive it. While the cost of computers continues to drop and be subject to special offers for educational institutions, it is inconceivable that the cost would drop enough to provide appropriate access for all of the uses outlined by Sheckels.

Use of computers for word-processing in debate is, as Sheckels notes, an immediate application of the computer for debate purposes. Its value in updating and rearranging argumentative briefs and constructive positions is significant. Used in this way, computers can encourage a higher quality of work than might be the current norm because of the reduction of clerical tasks. It is clear from our experience that the computer both saves time and encourages a higher quality of academic work in competitive debate. While Sheckels' notion that this quality of computers can be extended into actual competition is theoretically interesting, the practical limitations of current debate strategy certainly call the conclusion into question. The best National Debate Tournament debaters strive to use as little preparation time as is possible in the constructive and early rebuttal speeches. They prefer to retain eight to ten minutes of preparation time to organize, synthesize, and create strategic positions that assure them the greatest possible chance for victory prior to the last two rebuttal speeches.

My own experience as a judge/critic over the years suggests that the teams who maximize the use of their preparation time for the last two rebuttals demonstrate the highest quality of argumentation in practice. If one relies on a computer to generate arguments specific to the opponent's attack, the preparation time allocation would shift from the majority of time used prior to the last two rebuttals to the majority of time used for the first two constructives. The trade-off between higher quality generic argument application and higher quality rebuttal argumentation would seem to cancel out the advantage of using computers in the round. Further, the attitude of the student competitors toward this strategy shift will probably be negative. Coupled with the computer-phobia that Sheckels notes and the potential for technology failure (power outages, rain-soaked diskettes, printer breakdown, etc.), it would seem that some significant barriers potentially exist in student attitudes toward the use of computers in competition. As better computer technology develops, it is perhaps the case that the preparation time trade-off could be mitigated. However, the value of using a computer to update and improve argumentative briefs prior to tournaments seems to be, in our experience, an increase in the ability of the debater to invest some quality time thinking about the validity of his/her arguments for projected opponents. Certainly, argumentative briefs can be made specific to particular opponents in advance of tournaments. While this cannot be done for all opponents, it represents a middle ground for the use of computers as tools of pre-tournament preparation as opposed to in-tournament use.

Program management represents a potential use of the computer. Sheckels' notion that judging philosophies could be stored on the computer and updated periodically based on ballots is an excellent one. Clerical and or-

ganizational time could clearly be reduced and students would surely appreciate this service. The idea of posting travel schedules via computer seems fraught with logistical problems and, as Sheckels notes, it would rely on the maturity of students to use the system.

Emory's program-management experimentation has focused on organizational needs. We annually bring 2,000 high school students to the campus for tournaments, workshops, and tutorials. Additionally, we host a large intercollegiate tournament. By placing the mailing lists and invitations on the computer, the clerical work of the organization has been significantly reduced and the time of work-study students has, over the last year, been more focused on research and argument construction for the team as a whole. Two alumni of the Barkley Forum currently plan to run the Emory Summer High School Forensics Workshop tournament via computer this June in order to assess the potential for administering the larger intercollegiate and high school tournaments by computer next year. We are particularly interested in reducing the power matching time currently required for the February high school tournament which is attended by approximately 160 high school debate teams.

Northwestern University administered the Owen Coon tournament this past February via computer. The University of South Carolina generated efficient results while using a computer for their February CEDA tournament. Wake Forest University produced computer-generated results sheets at their national tournament last November. One of the Wake Forest students had written the tournament results program as part of an interdisciplinary academic effort. This type of academic partnership can provide forensic educators with specific software that can increase the efficiency of program management and ultimately the educational value of the quest for computer applications in forensics for the students as well. Surely many schools have used computer-generated solutions to program management problems. A sharing of those solutions would undoubtedly increase the resources available to forensic educators in this era of change.

Sheckels' examination of the research potential of the computer is illuminating. Many schools have used computer-generated debate bibliographies for years, but the cost breakdown Sheckels cites is revealing. Computer-generated bibliographies are cost-effective and can serve to equalize the resources available for research among the various competitive debate programs. The idea of in-competition accessing of research requires future vision and the overcoming of many barriers. The preparation time trade-off problem cited earlier in this commentary, student attitudes, tournament director attitudes, and other barriers would have to be dealt with in order for the system to have practical benefit.

While benefits to immediately accessing information could be illustrated, I must take issue with some of Sheckels' conclusions. The notion that "the emphasis could then shift from diligently acquiring evidence to intelligently using evidence" seems unfounded. Just because one may be able to call up research (whether prepared and stored at the university of the competitor or from research data bases) does not automatically assure the intelligent use of evidence in the competitive debate round. That the "emphasis could furthermore shift from matching card for card in a speed-reading contest

to examining evidence closely and contextually since both teams could conceivably access the evidence and look at it in its full context" also seems unfounded. Mutual access could be used to verify the context of evidence, but it is not clear how accurate context prevents "speed-reading." It is entirely possible that the easy access to *more* research by *all* schools could *increase* the "speed-reading" practice in NDT debate. It can be argued that the strategy of "spread" debating arose from the increased quantity of evidence among intercollegiate debaters in the last decade. Equalizing the research gap between competing schools in a way which increased the total amount of evidence could exacerbate the existing practices. It would seem that there must be more fundamental solutions to this problem than in-competition computer access to research.

The use of the computer for filing evidence is an area that should be more thoroughly explored. While time-saving is clearly an advantage of a computerized master file, running off a copy to send an extra team to a tournament would presuppose that the team had no familiarity with the evidence prior to the tournament. Perhaps, however, if one rearranged colleague assignments prior to a tournament, access to an extra hard copy of the master file would be useful. Randolph-Macon clearly has more experience with computer evidence filing than do most schools and an article of interest on the mechanics of such a program would be useful for all schools. Sheckels' experiment in tournament competition with his debate teams is an interesting one which raises questions and thus potential solutions to the problems and barriers to in-competition use cited earlier in this commentary. His conclusion that the system is not speedier than a paper system is intriguing. It is possible to project into the future a day when it *will* be speedier and that advantage would overcome a lot of the problems to in-competition use of computers. Unfortunately, it would seem that cost and technology barriers need to be resolved before widespread acceptance could be reached. Sheckels and his squad are to be commended for their experiment. The opportunity exists to examine student attitudes and to form additional hypotheses to be tested in the long-term application of computers to intercollegiate forensic competition.

REPLY

John Morello
Director of Forensics, James Madison University

Evaluating the possible uses of computers in debate is not the easiest task I have attempted recently. I am virtually computer-illiterate, with the exception of having taken one course in personal computer applications and being able to use (after a fashion) the computerized card catalog at the Library of Congress. I am so easily technologically intimidated that I resisted using an electric typewriter until two or three years ago!

Nevertheless, after reading Sheckels' position on "Computers in Debate," I have some reaction on what I perceive their promise to be. I will react to several of the potential uses which Sheckels has outlined.

Computer-Assisted Instruction

Certainly, programming learning modules to teach "debate skills" would minimize repetition for the coach. Instead of giving, over and over, the same old talks on "what is debate," the coach could simply toss over the floppy disk and point the students toward the terminal. Based on my own coaching experience, I'm not sure this approach would be advantageous.

First, debate involves a certain amount of drudgery. For novice debaters in particular, learning the format and terminology of debate is a tiring and often confusing task. Because our debate program is an "open" one, and because we encourage students with no previous high school experience to participate, the initial meetings in which the new "recruits" learn some of the mysteries of debate are very important. My own experience has been that discussion and support from other "confused" novices are essential in helping each new debater become acquainted with the activity.

Furthermore, the direction and understanding of a coach helps novice debaters stay interested. If the coach is able to show enthusiasm for debate, and able to encourage novices to "stick with it," the tasks facing beginning debaters are easier to negotiate than if they were left on their own with a computer. My personal view is that involvement in debate is often a function of what the students think about the coach. Direct personal contact is, therefore, essential in building and maintaining a squad. A computer cannot duplicate the delicate kinds of reinforcement and encouragement required to build interest in acquiring debating skills. This is especially the case when a program is geared toward students who lack the "basics" but are nonetheless interested in debating.

Aside from not being very helpful to novice debaters, I think computer-aided instruction holds little value for varsity debaters as well. The theory and practice of argumentation as practiced in debate tournaments is constantly evolving. Material programmed one year on counterplans, for example, could very well be irrelevant only one year later. Hence, the coach would get caught in a virtually never-ending cycle of updating computer programs to keep his/her varisty teams "current." This time might be better

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spent by the coach and the debaters sitting down together and chatting about approaches toward new theoretical developments.

Text Management

I agree with Sheckels that computers are probably very handy in this regard. Given the reliance on "briefed" arguments these days, access to a computer with word-processing capability is a definite advantage. The text can be created on the "screen," revised, adapted, and changed with ease. As the season progresses, the briefs can be "recalled" for the purposes of deleting outdated evidence, moving evidence for strategic purposes, or adding "preemptions." The team's warehouse of briefs could be easily and neatly stored, printed efficiently, and maintained from year to year.

My personal reaction, however, is that computer-assisted brief production could exacerbate two problems which currently affect competitive debate. First, there is a seeming over-reliance on prepared argument which substitutes for in-round analysis and argument construction. One of the supposed benefits of debating is the development of abilities in "thinking on one's feet." As brief construction becomes more highly "technologized," the importance of using briefs increases (an obvious extension of the "use it or lose it" mentality). It seems to me that computerizing brief creation could dissipate even further spur-of-the-moment clash—and debate will become even more of a "sheet reading" oral interpretation contest than it already is.

Second, a computerized brief-bank could minimize the educational benefits of writing, researching, and creating debate arguments. Individual debaters on a team could, theoretically, live off the briefs in the system instead of doing their own exploration, analysis, and argument development. Too often, I have witnessed debates between a pair of junior varsity debate teams struggling to "chew through" the varsity briefs. Unless a coach was willing to safeguard the computer system some way, any squad member could gain access to the briefs in the system. I am not sure that, faced with an abundance of material at hand, marginally motivated debaters would be willing to do the "hard part" of the activity as readily. Certainly, debaters already have ways to get materials from others. But at least a fellow debater can say "no" to a lazy squad member when he or she asks to see the latest briefs. Computers are far less discriminating about who gains access to information.

Tournament Applications

I really see little promise here. Carrying a computer to a tournament may make a team feel a bit like the first debaters who overwhelmed a world of recipe-boxed debaters by carrying the first catalog case. But other than the "golly, gee" effect, I cannot really see any practical benefits to this application of computers.

My own opinion is that debate competition exists to teach skills in analysis, research, organization, and advocacy. File management need not, and should not, be of much concern to us except to the extent that debaters need to be able to find and use what they have researched. Debaters already

carry *too much* information to tournaments. If the computer works as a file manager, then it would only encourage debaters to take more with them. Debaters already rely excessively on "external" proofs to the virtual exclusion of "internal" forms of reasoning and proof. I do not think debate needs *more* reliance on information. If anything, it needs a little less.

Additionally, it should be noted that Sheckels doesn't advocate computerized file management because it is better than existing systems. Rather, his point is that computerized file management is in vogue in law, government, and business. This claim is a chimera, I think. Ex-debaters are valuable employees because they can think, create arguments, and defend them. Businesses usually hire people who can manipulate whatever file-management systems they have created, so there really is little unique need for a debater to be familiar with how these systems work. Besides, a debate filing system would be idiosyncratic anyway. The debater would still have to learn a new system once he or she was hired. Sheckels' argument here impresses me a little like someone saying "debaters need to learn typing because businesses don't send hand-written letters anymore."

Program Management

Certainly, record-keeping would be facilitated by access to a computer. Tournament invitations could be easily recreated from year to year. Budgets, travel records, and other associated paperwork could be condensed. It would certainly make our debate office a lot neater if we could throw out years of old files and record the necessary data on a disk or two. Once again, I do not see this advantage as an overwhelming one. File cabinets work well enough, but if someone wants to do these tasks by computer, why not?

Conclusion

What it all comes down to, for me, is personal preference. If a debate program wants to use computers, and can afford them, there are certainly available applications. If a debate program wishes to avoid computerization, then there are reasons available, as I have tried to outline, to justify such resistance to change. In the end, I do not think it matters much which way one's program decides to go. Computers will not improve the quality of debate, as I see it. They will not help us solve some of the problems which confront the activity (such as dwindling participation and increasingly bizarre strategems). Computerized debate teams may still lose debates to teams with card files and notebooks. I am waiting, instead, for the time when debate judges will be replaced by computers. Maybe that is their ultimate use in an activity that prefers information processing to persuasion, that celebrates predictability in decision-making as opposed to recognizing that human choice is often a variable phenomenon, and that wants judges to "flow" points rather than engage in critical evaluation based on professional values and judgment.

REPLY

Sharon Porter
Director of Forensics, Northern Arizona University

This issue of *Speaker and Gavel* indicates the interest of forensic educators to join the computer revolution. Many of the routine tasks we face can be handled more efficiently through computers. Yet, restrictions are warranted prior to totally embracing this technology. This paper seeks to distinguish between educationally sound and potentially detrimental uses of computer technology as applied to our field.

The advantages of computers are discussed under the categories of computer aided instruction, administrative tasks, tournament management, and squad preparation. A place to trade computer software, mentioned by Sheckels, is ideal for the exchange of computer aided instructional material for forensics. Programs designed for individualized learning and testing are excellent tools for creating a knowledge base as well as determining the level of students in various aspects of competition. Once the knowledge level is assessed, instructors could employ computer aided instruction or proceed with theory discussions secure in the fact that the students know the fundamentals. Additionally, the creation of critical thinking and strategic games as instructional aids can advance the educational goals of the activity.

Computers provide valuable assistance managing administrative details. Yearly travel schedules, student excuse forms, and other materials can be prepared easily using word processing for easy retrieval, updating, and/or revision. Maintaining win-loss records on debaters, CEDA point totals or places, and awards for individual events expedites the tedious task of preparing national qualification forms. Models designed using spread sheet programs, such as Multiplan, are useful in budget preparation. These models can categorize expected as well as actual expenses and do the mathematical computations necessary to determine the exact amount remaining in accounts at any given time during the year.

Word processing software also eases tournament administration by preparing the invitations, registration packets, and receipts. Programs are currently available to assist with other tournament duties as well. An experiment in administering tournaments using the Individual Events Tournament Host Program[1] and replicating the same events manually demonstrated considerable personnel and time savings.[2] Also, debate results can be tabulated easily through the use of a Multiplan model.[3] Experimental work to further

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[1] Individual Events Tournament Host Program designed for Radio Shack TRS-80 Model III and IV is available through Ron Paludan, Hobbyte Software, P.O. Box 41414, Tucson, Arizona 85717-1414.

[2] Sharon Porter, "Computer vs. Manual Tabulation in Individual Events Tournament Administration," paper presented at Speech Communication Association Convention, Chicago, Illinois, 1984.

[3] A program designed by B. Wayne Calaway is currently being used in many debate tournaments in the Rocky Mountain Region.

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enhance tournament applications includes the scheduling of debate rounds and dropping high/low scores in both debate and individual events.

Computer technology can and should be used in squad preparation. Maintenance of case lists, completed brief lists, judging philosophies, revisions of cases, and/or negative briefs is facilitated by using appropriate software. Research, a difficulty for smaller programs and schools, can be significantly enhanced by accessing available data base information systems.

While computer technology is an effective means of assisting forensic personnel in organizing materials, cautions must be taken. The fundamental question is: "How far should we as forensic educators go in embracing computer technology as it applies to our field?" The remainder of this essay demonstrates that using computer technology in competitive rounds would be detrimental to the forensic community. Initially, the uses of computer technology would decrease emphasis on the educational goals of debate. Second, the practice would significantly alter the focus of tournament competition.

Traditionally, forensic activities are sponsored by departments of communication. Most programs, therefore, build, develop, and improve skills associated with that discipline. In this context debate stresses research, analysis, and critical thinking abilities.

The emergence of CEDA represented a backlash in the forensic community to an overreliance on evidence and "spread" debate. The ease of securing and managing volumes of data through computer networking would increase evidence use rather than keeping information within reasonable bounds. Knowledge that evidence is available through this system could result in a decrease of prior research. Although having articles located and printed for debaters saves valuable time, some educational goals are eliminated. There are values to library research. Competitors should learn where to look for information and, once a desired article is located, learn how to cut the quotations. Additionally, accessing articles through information networking during the round provides inadequate time to properly evaluate the evidence or to consider the analysis involved in constructing the argument. The result may be a proliferation of hastily constructed and inferior arguments.

In taking the above scenario to its logical conclusion one must question how long before not only articles were cut for debaters but the analysis provided also. While a limited market exists, the precedence is established already by the numerous debate handbooks available. However, with the speed of "computer briefs" students could arrive at a tournament, compile a case list, access the system, and have prepared briefs printed out for them. This same process could take place *in the actual round* when students found out the specific case they were expected to debate. Consequently, work preceding a tournament and prior analysis would become unnecessary for successful win-loss records.

As students cut evidence and formulate briefs they learn the rudiments of analysis and critical thinking. Competitors not going through this process are unaware of the context of the information and are relying on the thoughts and interpretations of others. Using computerized evidence and briefs overlooks the fact that many effective arguments are developed logically,

requiring little or no evidence. The result is obvious: rather than training students to think we would be sanctioning more and more reliance either on computer operators and programmers or on the artificial intelligence of the computer. This appears on face value to be the antithesis of what the debate experience is designed to accomplish.

Second, using computer technology within competitive rounds significantly alters the focus of the actual debate. The accessing, inputting, and revision of data takes time even for the most experienced operator. To do these tasks in a round directs the competitors' attention away from what they should be doing—listening, flowing, thinking, and preparing arguments. Even if the logistical problems were overcome, the distractions of having machinery at work in the room would minimize the communication element and focus on the mechanical element. One must wonder how long before these technological advances would evolve into "computer debate," a new game, modeled after a once practiced communication activity. Envision two operators programming analysis, calling up data systems, inputing, managing file systems, and printing out material to be "judged" either by a person or by another computer.

Sheckels is correct. In the area of forensic education the revolution of computer technology is only beginning. At this stage, more than any other, it is incumbent on forensic educators to determine carefully the direction we wish to see the revolution take. Computer technology can be very beneficial in our work. Available software can assist with many tasks and a sharing of this material as well as the development of computer aided instructional material in forensics is a worthy educational goal. However, preparing students in the uses of computer technology, if this should even be an objective of forensic personnel, should be accomplished outside actual competition. To use computers within a debate round could drastically change our roles as well as our goals. Often professionals in our field justify the existence of forensics by stressing the skills that debate instills in young people—the skills of research, analysis, and critical thinking. Few arguments can be advanced to deny that the workload of competitors would be reduced by utilizing computer technology to its utmost potential. Yet, something essential is missing from this process and many view this missing element as the essence of our discipline. We will be eliminating the human element: the communication element, the teaching element, the thinking element which separates human beings from other living beings. This loss will be a sad one not only for the forensic community but for society at large.

REPLY

Barbara F. Shreve-Sims
Director of Forensics, Alderson-Broaddus College

With the introduction of computer technology, educators have been handed a powerful new tool. Not only can computers minimize an educator's administrative tasks, they can also play a vital role in the teaching process. As colleges and universities face the technological explosion, their ability to accommodate innovation and, at the same time, preserve tradition is crucial.[1] We, as forensics educators, are charged with this same task.

Computer-Assisted Instruction

While it is an interesting technique to review basic theory, to stimulate thinking, and to develop strategies, my attitude is that CAI appears to provide variety as opposed to strong or monumental educational progress.

The greatest limitation of CAI lies in the lack of commercial software available that is specific to debate and the amount of time that would be required for individual coaches to design software. I am not convinced that CAI can be superior to traditional classroom teaching and learning. While used effectively for analytical purposes, CAI can do little, if anything, for the traditional ethos and pathos involved in debate. For example, in a computer lesson on evidence use, the debater might be given an argument and must decide which of the four pieces of evidence provided is the best to support the argument. The programmer might select a possible quote to support an argument, but cannot discern if that is the best quote for the debater to present, the judge to hear, or for use against the opposing team.

Another possibility for CAI is computer debating.[2] Any number of rules can be established in terms of format, process, and constraints. One version involves a proposition displayed on the screen, and the debater is required to state his/her position and give supporting reasons. The opposition then states his/her position and gives supporting reasons. They in turn refute each other, rebuild their original reasons, and give compelling closing statements. A hard copy can be printed for others to decide who won and why.

Text Preparation

I strongly support the use of the computer for text preparation on campus and between debate rounds during competition. For revisions, the computer increases efficiency and provides a much neater appearance.

During rounds of competition, I am not in favor of the use of the computer for text preparation. Sheckels refers to the obvious limitation of revising one brief at a time. In addition, the noise of the printer would be

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[1] Patricia H. Hall, "The Future of the School as a Workplace," *The Delta Kappa Gamma Bulletin*, Spring 1984, p. 47.

[2] Gary Stephens, "Computer Debating," *Computers and Composition*, August 1984, pp. 7–8.

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distracting to me as a judge and most likely to the opposing team. Quieter printers are available, but they become less portable and increase in price proportionally as they decrease noise. While I support modification of prepared briefs during debate rounds, I hope debaters will develop this skill on their feet without having every word written on paper. Thus, the computer for in-round revisions seems unnecessary.

Program Management

The computer seems to provide a definite increase in efficiency for program management. Some of my computer-knowledgeable colleagues recommend "d Base II" over "DataStar" for quicker access and greater flexibility of use for judging philosophies and evidence. In addition to putting travel schedules on the computer, mail messages can be sent for practice rounds, strategy sessions, and individual conferences.

The greatest computer use I have found in program management is in the tabulation of results when we return to campus after a tournament. I send each tournament's results to my division chair, the academic dean, and our college president. I type into the computer the name of the tournament, names of my team members, whom they debated, the decision, speaker points and ranks, the side of the proposition they debated, the judge, and awards. It is easy for me to tabulate various win-loss percentages and other statistics using the software "Multiplan."

Research

The computer provides a definite increase in efficiency for research, providing a valuable asset for a small institution with limited library facilities. While I strongly support the use of the computer for research, I doubt that two of Sheckels' four beneficial effects would directly result from immediate access to data. Intelligent use of evidence and closely examining evidence seem to be unrelated to the method of research.

Evidence Filing

There seems to be a definite advantage to a master file of evidence on the computer. My greatest fear is loss. It is one thing to misplace a couple of cards or a brief, but far more disastrous to lose a diskette full of evidence or briefs. My computer colleagues recommend a second and third diskette for backup and at least one hard copy of everything that goes on the computer.

Even with a master file of evidence on the computer, I am not ready to replace our present briefs and file boxes with a computer during rounds of competition. My computer colleagues indicate that Sheckels' single print command problem with "DataStar" could be eliminated with the use of "d Base II," but the parallel printer with a limited buffer can be solved only with a much less portable and much more expensive printer. However, an even greater reason for my reluctance to rely solely on the computer is the possibility of any type of mechanical failure that would leave the team without evidence or briefs.

Summary

No doubt the computer has numerous uses in debate, but one of the major constraints for a small college is the inability to finance sufficient hardware for the coaches and debaters to use. The computer can greatly reduce the amount of time the forensic director devotes to administrative tasks and the amount of time debaters spend researching and copying evidence and preparing and revising briefs. Plus, the skills gained by both coaches and debaters will be extremely valuable as we continue in this technological age.

REPLY

Warren Decker
Director of Forensics, George Mason University

A decade ago an issue of *Speaker and Gavel* was dedicated to the topic of "humanizing forensics." In that issue several authors, myself included, addressed some problems associated with debate and offered a few solutions. One could easily guess the problems that were identified because they are the same problems that still confront many forensic educators.

One problem that is somewhat different now is that the number of students participating in the activity has decreased substantially. Some of the problems addressed a decade ago certainly had an impact with respect to the number of students who were willing to engage in debate.

In that issue I addressed the problems associated with the huge increase in the amount of information available and worried about the impact of the information "glut" on debate. I argued that debaters might be able to work through this problem and thereby offer some solutions of utility in the "real" world. Certainly the electronic manipulation of information might well be a part of those solutions, but we have not set any speed records getting to these solutions. One might observe that the power of inertia/presumption may be dead in debate but not in the real world. However slow we are moving, the discussion of computer applications in debate is an appropriate step. Sheckels sets forth a series of reasonable arguments in favor of the increased use of computers in debate, and I would like to respond to those arguments as a forensic educator and as a user of computers as a support system for debate.

Sheckels' comments on the use of CAI are appropriate. I would add, however, that the computer can be used in teaching debate theory and practice. A series of questions related to theory or practice could be prepared and debaters could use the computer to brush up or to learn basics. Utilizing CAI in this area would overcome a real practical problem, the necessity of having all debaters present for lectures. We all recognize the difficulties of scheduling meetings for busy debaters and busier coaches. CAI provides the flexibility for them to access this information at any time they can log on a computer. I disagree with Sheckels when he argues that the demand for such software would be limited. Given the number of high school debaters and the condition of high school libraries, particularly on theory, it would appear that a vast market may exist. However, in the interim, I fully agree that coaches should be prepared to share software in some organized fashion.

Sheckels notes in passing that CAI can save time for the forensic educator. This conclusion might be speculative given my experience since significant amounts of time must be dedicated to teaching students basic computer skills. This is not an issue that should impede the development of computer usage in debate, however. If nothing else is achieved, at least the student becomes computer literate.

The ease and quickness of making revisions at tournaments is probably

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overstated, and this is usually a primary advantage claimed for the application of the computer to debate. However, unless the failure to do so would be catastrophic, I do not think debaters would make significant revisions at tournaments. Given the fact that debaters make few if any adaptations of generic arguments now, I would suspect the availability of a computer may not spawn a great increase.

The utilization of electronic mail is only an advantage if it is usable from remote locations. Efficient electronic mail requires that debaters have computer equipment available at convenient locations and that the equipment is compatible. Otherwise the traditional bulletin board is equally efficient and significantly cheaper.

Sheckels then moves to a discussion of the advantages associated with having immediate data searches available during a round of debate. I might tentatively agree that being able to do your research via a computer during a debate might be more inviting than spending hours in a library prior to a tournament. However, I cannot visualize the feasibility of this in the short term. Second, he claims that having immediate search capability might shift the emphasis from acquiring evidence to intelligently using evidence. The reasons why this transformation would occur elude me.

Additionally, I do not agree with the claim that this will also lead to a reduction in speed-reading of evidence and an increase in scrutiny and contextual analysis. It would seem to me that encouraging the initial retrieval of evidence during a round might well decrease the quality of analysis of evidence. This problem, however, is not unique to computers and is not a reason to discourage their use in debate. His final claim about skill transfer to outside occupations may have some validity depending upon the extent to which the technology is utilized.

The utilization of data bases for debate research is the second most valuable use of the computer currently, and it may well become the most valuable. Sheckels observes quite accurately that extemporaneous speakers and others in individual events may well find the computer quite useful in quite the same way as debaters.

Sheckels now shifts his attention to computerized evidence files. George Mason has utilized the computer printing of their files for several years. We accomplish our printing with the assistance of an HP 3000 computer and the primary university printer. We print multiple copies of the central file so that all members of the team have the same evidence. This can be rather expensive, and it is also very hard on a printer. A normal printer, such as those attached to most microcomputers, would not handle this task. Perhaps if the squad was small and the number of evidence cards printed was also limited then a small printer might work. The use of electronic files is possible in the next few years, but time limitations currently prohibit their use in a round of debate on a widespread basis.

One possibility that Sheckels ignored is the teaching of filing techniques to younger debaters via the electronic central files. A very common question from novice debaters relates to filing evidence. A computerized file available for quick examination would answer these questions. Also, one central file which is categorized in advance can solve some of the time demands faced by debaters. Unfortunately, one of the problems associated

with any central file is that not all debaters think alike and one file system may not work for all debaters.

Sheckels is somewhat inconsistent when he addresses the issue of the costs associated with computerizing a debate team. He argues that computers may eliminate the monetary disadvantage of some teams since computers can do much to equalize research resources, etc.; however, he then indicates in his discussion of his own attempts to computerize his squad that "... higher capacity technology was not possible given our capital expenditures budget"; obviously monetary constraints play a significant role in any attempt to computerize. Even more important is the necessity to plan well when acquiring computer equipment. The variety currently available is almost insurmountable and the original purchases may well limit the utility of future purchases. The purchaser must do careful research and be sure to consult with university computer staff prior to making decisions.

One additional factor that one might find helpful is that educating debaters to use the computer can be an additional justification for the debate budget. Most schools are very concerned that we turn out computer literate students. Therefore, programs which promote that goal may get funding more easily. The role of the computer in decision making is one that can be sold to administrators who control budgets. We should not ignore the fact that many universities are very willing to support innovative technologically-oriented programs when they have been reluctant to fund more traditional programs.

One aspect of computerizing debate that Sheckels did not address is the possible use of computer conferencing for debate tournaments. One can readily visualize the complete elimination of the face-to-face communicative aspects of debate in favor of conducting tournaments via phone lines and computers. No longer would fast talkers win, but those who could type the fastest on their microcomputer might well win the debate. The growth of computer conferences in other areas similar to debate has been fairly significant.

Finally, is debate the appropriate place to foster the growth of high technology? There might very well be better places to learn to use a computer and there are certainly skills unique to debate which might be better developed if we paid less attention to using high technology and improved our teaching of listening, analysis, refutation, etc. I would prefer to encourage the careful appraisal of whatever we do in debate and that includes the process of computerization.

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